

Applicant: van Schepdael, L.J.M.M.
Application No.: Unassigned
Filing Date: Herewith
Docket No.: 903-123 PCT/US
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A. Amendments to the Specification:

Please add the following immediately after the title of the invention:

CROSS-REFERENCE TO RELATED APPLICATIONS:

This application is the National Stage of International Application No. PCT/NL2003/000512, filed July 11, 2003, which claims the benefit of Netherlands Application No. NL 1021142, filed July 24, 2002, the contents of which is incorporated by reference herein.

Please add the following new paragraph immediately prior to page 1, line 7, and after the Cross Reference to Related Applications, as follows:

FIELD OF THE INVENTION:

Please amend the paragraph beginning at page 1, line 7, as follows:

The invention relates to a device for the piece-wise or batch-wise refining of pieces of a substrate, for instance a textile substrate, under high pressure with a treatment medium ~~according to the preamble of claim 1.~~

Please add the following new paragraph immediately prior to page 1, line 11, as follows:

BACKGROUND OF THE INVENTION:

Please add the following new paragraph immediately prior to page 1, line 37, as follows:

SUMMARY OF THE INVENTION:

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Please amend the paragraph beginning at page 2, line 3, as follows:

This object is achieved according to the present invention by a device ~~according to claim 4 for the piece-wise or batch-wise refining of pieces of a substrate with a treatment medium under high pressure, comprising:~~

~~- a substantially cylindrical pressure vessel, which is provided with a closable feed aperture for placing the pieces of substrate in said pressure vessel;~~

~~- a pipe system for feeding the treatment medium to and discharging it from said pressure vessel under high pressure during treatment;~~

wherein

said cylindrical pressure vessel is provided on at least one of its two end faces with an aperture that can be closed by a lid, which aperture forms said feed aperture,

said device comprises retaining means for keeping said lid in place in a sealing manner during treatment,

and said retaining means comprise a bounding frame that is circumferentially closed, with two interconnected end pieces situated at a distance from each other, which end pieces in a closed position can be slid over said pressure vessel and thereby retain said end faces of said pressure vessel in its axial direction. In this case a bounding frame that is closed around its circumference is provided with two interconnected end pieces situated at a distance from each other. The bounding frame and the pressure vessel can be slid into each other, in which case the end faces of the pressure vessel are retained in the axial direction by the two end pieces of the bounding frame. Owing to the fact that a feed aperture that can be closed by a lid is provided on at least one of the two end faces of the pressure vessel, the lid is advantageously retained directly by the bounding frame in the axial direction. The axial pressure forces acting upon the lid are advantageously dissipated by the bounding frame, and therefore do not act upon the cylinder wall of the pressure vessel. The cylinder wall therefore only has to withstand the radial pressure forces acting upon it. As a result of this separation of axial and radial forces, the design of the pressure vessel walls becomes simpler. For example, in the case of vessel walls of composite materials, glass windings or carbon fibre windings over the end faces of the pressure vessel or

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with an axial component can be dispensed with, owing to the fact that only tangential cylinder wall windings are needed. A vessel having walls of composite materials has the advantage that the vessel can be given a better thermic isolation and a lower thermic inertia, which leads to a shorter cycle time, improved steering and control, and energy saving of the refining process.

Please amend the paragraph beginning at page 3, line 27, as follows:

The invention also relates to a method for the piece-wise or batch-wise refining of pieces of a substrate, for instance a textile substrate, under high pressure with a treatment medium ~~according to claims 13-15, and to the use of a device according to claim 16 for the piece-wise or batch-wise refining of pieces of textile substrates.~~

Please add the following new paragraph immediately prior to page 3, line 31, as follows:

BRIEF DESCRIPTION OF THE DRAWINGS:

Please add the following new paragraph immediately prior to page 4, line 4, as follows:

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS:

Please amend the section description for the claims on the top of page 9, as follows:

WHAT IS CLAIMED IS: CLAIMS